



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,587	01/29/2004	Charles J. Moses	11666.0138NP	6194
47548	7590	08/15/2007	EXAMINER	
RICHARD AUCHTERLONIE NOVAK DRUCE & QUIGG, LLP 1000 LOUISIANA 53RD FLOOR HOUSTON, TX 77002			HEWITT, JAMES M	
ART UNIT		PAPER NUMBER		3679
MAIL DATE		DELIVERY MODE		08/15/2007 PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/767,587	MOSES ET AL.	
	Examiner	Art Unit	
	James M. Hewitt	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10/6/06 & 1/26/07.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-5,7,8,10-22,24-28,30-51 and 53-71 is/are pending in the application.
- 4a) Of the above claim(s) 4,8,10-12,16-18,31,32,35-37,40-42,54 and 55 is/are withdrawn from consideration.
- 5) Claim(s) 56-71 is/are allowed.
- 6) Claim(s) 1,3,5,7,13-15,24-28,33,34,38,39 and 47-51 is/are rejected.
- 7) Claim(s) 19-22,30,43-46 and 53 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10/6/06 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 10/6/06, 1/26/07.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION***Response to Amendment***

The amendment to the claims filed on 10/6/06 does not comply with the requirements of 37 CFR 1.121(c) because claims 4, 8, 10-12, 16-18, 31-32, 35-37, 40-42, 54-55, 58-60 and 69-71 are not provided with the proper status identifier. In addition, single brackets are used to indicate deleted text in claim 19.

Election/Restrictions

Claims 4, 8, 10-12, 16-18, 31-32, 35-37, 40-42 and 54-55 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/20/06.

With respect to claim 8, it is clear from paragraphs [00054] – [00060] that the claim is drawn to a nonelected species.

With respect to claims 10-12, it is clear from paragraphs [00054], [00055] and [00057] that the claims are drawn to a nonelected species.

Claim 56 is allowable. The restriction requirement as set forth in the Office action mailed on 12/23/05, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). The restriction requirement is hereby withdrawn as to any claim that requires all the limitations

of allowable claim 56. Claims 58-60 and 69-71 are no longer withdrawn from consideration because the claim(s) requires all the limitations of allowable claim 56.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Information Disclosure Statement

The information disclosure statement filed 10/6/06 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the document cited therein has not been provided with a publication date. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the

statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Documents, including "internal" documents, provided with a printing or creation date are not considered to meet the requirement of the provision of a publication date.

Several of the documents cited in the information disclosure statement filed 1/26/07 fail to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because they have not been provided with a publication date. These documents have not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

The replacement drawing sheet was received on 10/6/06 and is acceptable.

Double Patenting

Applicant is advised that should claim 5 be found allowable, claim 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that

they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5, 7, 13-15, 24-28, 33-34, 38-39 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whightsil, Sr. et al (US 5,133,578) in view of Angel (US 4,273,363), and further in view of Herbert (US 4,076,284), and still further in view of Peterson (US 4,256,354).

Whightsil, Sr. et al discloses a flexible pipe joint that sealingly connects tubular members (16, 18) while allowing limited articulated movement therebetween. The joint includes body (30/32/34/36/38), an extension pipe (16/22) and a laminated elastomeric flex element (28) coupling the extension pipe to the body, the flex element having alternate elastomer layers and reinforcement layers (col. 5, ll. 35-39), the elastomer layers having inner elastomer layers near to the extension pipe and outer elastomer layers away from the extension pipe. Whightsil, Sr. et al fails to teach that the joint is for conveying production fluid greater than 180 degrees F in a subsea environment.

Angel teaches a similar flexible pipe joint that is capable of handling temperatures of about 230 degrees F for 20-30 years (see col. 1, ll. 31-42, 48-51; col. 2, ll. 21-31) by insulating his coupling so as to reduce heat transfer to the elastomeric sealing assembly of the flexible coupling from the fluid flowing through the coupling. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al's coupling to be insulative as taught by Angel in order to use his coupling in a high temperature environment for a service life of 20-30 years. Whightsil, Sr. et al fails to teach that the inner layers have greater shear area than the outer layers. Herbert et al teaches a similar flexible pipe joint wherein the inner elastomeric layers have a greater shear area than the outer elastomeric layers (see FIG. 1; col. 3, ll. 24-35). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al such that the inner elastomeric layers have a greater shear area than the outer elastomeric layers in order to better withstand axial loads created by pressure plus any applied tension loads. Whightsil, Sr. et al fails to teach that the inner elastomeric layers have a higher shear modulus than the outer elastomeric layers. Peterson teaches a laminated bearing having alternating elastomeric and reinforcement layers. The inner elastomeric layers have a higher shear modulus than the outer layers to equalize strain distribution and provide an optimum balance of strain distribution bulging and spring rate. The modulii is varied by varying the amount of carbon added to the elastomeric material. Refer to col. 1, ll. 59-63, col. 3, ll. 26-36, 56-68, col. 4, ll. 37-43, 63-68,

col. 6, ll. 62-65. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al such that the inner elastomeric layers have a higher shear modulus than the outer layers as taught by Peterson in order to equalize strain distribution and provide an optimum balance of strain distribution bulging and spring rate.

With respect to claims 13 and 33, Whightsil, Sr. et al fails to teach a heat shield disposed in the extension pipe within the vicinity of the flex element. Herbert et al teaches providing a wear ring (42) underlying the extension pipe in his flexible joint. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al with a wear ring disposed in the extension pipe within the vicinity of the flex element as taught by Herbert et al in order to reduce wear and insulate the extension pipe and flex element.

With respect to claims 14, 15 and 38, 39, Herbert et al fails to teach that the wear ring is polymeric and polyetheretherketone reinforced with glass fiber. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a wear ring that is polymeric or polyetheretherketone reinforced with glass fiber, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claims 24-25 and 47, Whightsil, Sr. et al fails to teach that the hemispherical portion is made of nickel-chromium-iron alloy. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the

invention was made to make the hemispherical portion from nickel-chromium-iron alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claim 27, Whightsil, Sr. et al discloses that the inner annulus about the bellows is filled with a substantially incompressible fluid. Whightsil, Sr. et al fails to teach that the fluid is polyalkylene glycol solution. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use polyalkylene glycol solution as the incompressible fluid, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claim 28, Whightsil, Sr. et al fails to teach that the bellows is made of nickel-chromium-iron alloy. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the bellows from nickel-chromium-iron alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Claims 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whightsil, Sr. et al (US 5,133,578) in view of Angel (US 4,273,363), and further in view of Herbert (US 4,076,284).

Whightsil, Sr. et al discloses a flexible pipe joint that sealingly connects tubular members (16, 18) while allowing limited articulated movement therebetween. The joint includes body (30/32/34/36/38), an extension pipe (16/22) and a laminated elastomeric flex element (28) coupling the extension pipe to the body, the flex element having alternate elastomer layers and reinforcement layers (col. 5, ll. 35-39), the elastomer layers having inner elastomer layers near to the extension pipe and outer elastomer layers away from the extension pipe. Whightsil, Sr. et al fails to teach that the joint is for conveying production fluid greater than 180 degrees F in a subsea environment. Angel teaches a similar flexible pipe joint that is capable of handling temperatures of about 230 degrees F for 20-30 years (see col. 1, ll. 31-42, 48-51; col. 2, ll. 21-31) by insulating his coupling so as to reduce heat transfer to the elastomeric sealing assembly of the flexible coupling from the fluid flowing through the coupling. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al's coupling to be insulative as taught by Angel in order to use his coupling in a high temperature environment for a service life of 20-30 years. Whightsil, Sr. et al fails to teach that the inner layers have greater shear area than the outer layers. Herbert et al teaches a similar flexible pipe joint wherein the inner elastomeric layers have a greater shear area than the outer elastomeric layers (see FIG. 1; col. 3, ll. 24-35). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Whightsil, Sr. et al such that the inner elastomeric layers have a greater shear

area than the outer elastomeric layers in order to better withstand axial loads created by pressure plus any applied tension loads.

With respect to claim 50, Whightsil, Sr. et al discloses that the inner annulus about the bellows is filled with a substantially incompressible fluid. Whightsil, Sr. et al fails to teach that the fluid is polyalkylene glycol solution. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use polyalkylene glycol solution as the incompressible fluid, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claim 51, Whightsil, Sr. et al fails to teach that the bellows is made of nickel-chromium-iron alloy. Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the bellows from nickel-chromium-iron alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Allowable Subject Matter

Claims 19-22, 30, 43-46 and 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 56-71 are allowed.

Response to Arguments

Applicant's arguments, see pages 29-39, filed 10/6/06, with respect to the rejection(s) of claim(s) under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection has been made. Refer above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hewitt whose telephone number is 571-272-7084. The examiner can normally be reached on M-F, 930am-600pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH
4/16/07

J. M. H.
JAMES M. HEWITT
PRIMARY EXAMINER